ISO character entities and their LaTeX equivalents

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Date: 1998/09/08 21:25:50
Revision: 2.14

Abstract

This is an attempt to make an overview of the ISO character entities (ISO 8879:1986) and their LaTeX equivalents. It is also a handy reference to the ISO character entities for non-LaTeX users.

Note that some symbols require additional LaTeX packages like `amssymb`, `amsfonts`, `wasysym` or `pifont`. We are working on how to document this properly.

Make sure that you have the latest version of this overview! The project "home" on the Web, is at http://home.sol.no/~mathrune/isoent/. The LaTeX source for this document is available there, as well as Postscript or PDF versions.

If you find errors or have comments/suggestions of any kind, please email <mathrune@online.no>.

A copy of the ISO character entity sets is included in the source distribution of this doucument. They can also be obtained from: ftp://ftp.ifi.uio.no/pub/SGML/ENTITIES/.

Contents

1 Added Math Symbols: Arrow Relations

Source file: `ISOamsa`

These caracters are only valid in a LaTeX math environment. Some of them also need the AMSSymb package.

ISO entity	LaTeX equivalent	Appearance	Description
↶	\curvearrowleft	$\curvearrowleft$	left curved arrow
↷	\curvearrowright	$\curvearrowright$	right curved arrow
⇓	\Downarrow	$\Downarrow$	down dbl arrow
&darr2;	\downdownarrows	$\downdownarrows$	two down arrows
⇃	\downharpoonleft	$\downharpoonleft$	down harpoon-left
⇂	\downharpoonright	$\downharpoonright$	down harpoon-right
⇚	\Lleftarrow	$\Lleftarrow$	left triple arrow
↞	\twoheadleftarrow	$\twoheadleftarrow$	
&larr2;	\leftleftarrows	$\leftleftarrows$	two left arrows
↩	\hookleftarrow	$\hookleftarrow$	left arrow-hooked
↫	\looparrowleft	$\looparrowleft$	left arrow-looped
↢	\leftarrowtail	$\leftarrowtail$	left arrow-tailed
↽	\leftharpoondown	$\leftharpoondown$	left harpoon-down
↼	\leftharpoonup	$\leftharpoonup$	left harpoon-up
⇔	\Leftrightarrow	$\Leftrightarrow$	l&r dbl arrow
↔	\leftrightarrow	$\leftrightarrow$	l&r arrow
&lrarr2;	\leftrightarrows	$\leftrightarrows$	l arr over r arr
&rlarr2;	\rightleftarrows	$\rightleftarrows$	r arr over l arr
↭	\leftrightsquigarrow	$\leftrightsquigarrow$	l&r arr-wavy
&rlhar2;	\rightleftharpoons	$\rightleftharpoons$	r harp over l
&lrhar2;	\leftrightharpoons	$\leftrightharpoons$	l harp over r
↰	\Lsh	$\Lsh$	
↦	\mapsto	$\mapsto$	
⊸	\multimap	$\multimap$	
↗	\nearrow	$\nearrow$	NE pointing arrow
⇍	\nLeftarrow	$\nLeftarrow$	not implied by
↚	\nleftarrow	$\nleftarrow$	not left arrow
⇎	\nLeftrightarrow	$\nLeftrightarrow$	not l&r dbl arr
↮	\nleftrightarrow	$\nleftrightarrow$	not l&r arrow
↛	\nrightarrow	$\nrightarrow$	not right arrow
⇏	\nRightarrow	$\nRightarrow$	not implies
↖	\nwarrow	$\nwarrow$	NW pointing arrow
↺	\circlearrowleft	$\circlearrowleft$	l arr in circle
↻	\circlearrowright	$\circlearrowright$	r arr in circle
⇛	\Rrightarrow	$\Rrightarrow$	right triple arrow
↠	\twoheadrightarrow	$\twoheadrightarrow$	
&rarr2;	\rightrightarrows	$\rightrightarrows$	two right arrows
↪	\hookrightarrow	$\hookrightarrow$	right arrow-hooked
↬	\looparrowright	$\looparrowright$	right arrow-looped
↣	\rightarrowtail	$\rightarrowtail$	right arrow-tailed
↝	\rightsquigarrow	$\rightsquigarrow$	right arrow-wavy

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ISO entity	LaTeX equivalent	Appearance	Description
⇁	`\rightharpoondown`	$\rightharpoondown$	right harpoon-down
⇀	`\rightharpoonup`	$\rightharpoonup$	right harpoon-up
↱	`\Rsh`	$\Rsh$	
&drarr;	`\searrow`	$\searrow$	downward right arrow
&dlarr;	`\swarrow`	$\swarrow$	downward l arrow
⇑	`\Uparrow`	$\Uparrow$	up dbl arrow
&uarr2;	`\upuparrows`	$\upuparrows$	two up arrows
⇕	`\Updownarrow`	$\Updownarrow$	up&down dbl arrow
↕	`\updownarrow`	$\updownarrow$	up&down arrow
↿	`\upharpoonleft`	$\upharpoonleft$	up harpoon-left
↾	`\upharpoonright`	$\upharpoonright$	up harpoon-right
⟸	`\Longleftarrow`	$\Longleftarrow$	long l dbl arrow
⟺	`\Longleftrightarrow`	$\Longleftrightarrow$	long l&r dbl arr
⟷	`\longleftrightarrow`	$\longleftrightarrow$	long l&r arr
⟹	`\Longrightarrow`	$\Longrightarrow$	long right dbl arr

2 Added Math Symbols: Binary Operators

Source file: `ISOamsb`

These caracters are only valid in a LaTeX math environment. Some of them also need the AMSSymb package.

ISO entity	LaTeX equivalent	Appearance	Description
⨿	`\amalg`	$\amalg$	amalgamation or coproduct
⌆	`\doublebarwedge`	$\doublebarwedge$	log and, dbl bar
⌅	`\barwedge`	$\barwedge$	logical and, bar above
⋒	`\Cap`	$\Cap$	dbl intersection
⋓	`\Cup`	$\Cup$	dbl union
⋎	`\curlyvee`	$\curlyvee$	curly logical or
⋏	`\curlywedge`	$\curlywedge$	curly logical and
⋄	`\diamond`	$\diamond$	open diamond
⋇	`\divideontimes`	$\divideontimes$	division on times
⊺	`\intercal`	$\intercal$	intercal
⋋	`\leftthreetimes`	$\leftthreetimes$	
⋉	`\ltimes`	$\ltimes$	times sign, left closed
⊟	`\boxminus`	$\boxminus$	minus sign in box
⊛	`\circledast`	$\circledast$	asterisk in circle
⊚	`\circledcirc`	$\circledcirc$	open dot in circle
⊝	`\circleddash`	$\circleddash$	hyphen in circle
⊙	`\odot`	$\odot$	middle dot in circle
⊖	`\ominus`	$\ominus$	minus sign in circle
⊕	`\oplus`	$\oplus$	plus sign in circle
⊘	`\oslash`	$\oslash$	solidus in circle
⊗	`\otimes`	$\otimes$	multiply sign in circle
⊞	`\boxplus`	$\boxplus$	plus sign in box
∔	`\dotplus`	$\dotplus$	plus sign, dot above
⋌	`\rightthreetimes`	$\rightthreetimes$	
⋊	`\rtimes`	$\rtimes$	times sign, right closed
⋅	`\cdot`	$\cdot$	small middle dot
⊡	`\boxdot`	$\boxdot$	small dot in box
∖	`\setminus`	$\setminus$	reverse solidus
⊓	`\sqcap`	$\sqcap$	square intersection
⊔	`\sqcup`	$\sqcup$	square union
∖	`\smallsetminus`	$\smallsetminus$	sm reverse solidus
⋆	`\star`	$\star$	small star, filled
⊠	`\boxtimes`	$\boxtimes$	multiply sign in box
⊤	`\top`	$\top$	inverted perpendicular
⊎	`\uplus`	$\uplus$	plus sign in union
≀	`\wr`	$\wr$	wreath product
◯	`\bigcirc`	$\bigcirc$	large circle
▽	`\bigtriangledown`	$\bigtriangledown$	big dn tri, open
△	`\bigtriangleup`	$\bigtriangleup$	big up tri, open
∐	`\coprod`	$\coprod$	coproduct operator
∏	`\prod`	$\prod$	product operator

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ISO entity	LaTeX equivalent	Appearance	Description
∑	`\sum`	$\sum$	summation operator

3 Added Math Symbols: Delimiters

Source file: `ISOamsc`

These caracters are only valid in a LaTeX math environment. The four corner symbols also need the AMSFonts package.

ISO entity	LaTeX equivalent	Appearance	Description
⌉	`\rceil`	$\rceil$	right ceiling
⌋	`\rfloor`	$\rfloor$	right floor
⦔		missing	right paren, gt
⌝	`\urcorner`	$\urcorner$	upper right corner
⌟	`\lrcorner`	$\lrcorner$	downward right corner
⌈	`\lceil`	$\lceil$	left ceiling
⌊	`\lfloor`	$\lfloor$	left floor
&lpargt;		missing	left parenthesis, gt
⌜	`\ulcorner`	$\ulcorner$	upper left corner
⌞	`\llcorner`	$\llcorner$	downward left corner

4 Added Math Symbols: Negated Relations

Source file: `ISOamsn`

These caracters are only valid in a LaTeX math environment. Some of them also need the AMSSymb package.

ISO entity	LaTeX equivalent	Appearance	Description
⪊	`\gnapprox`	$\gnapprox$	greater, not approximate
⪈	`\gneq`	$\gneq$	greater, not equals
≩	`\gneqq`	$\gneqq$	greater, not dbl equals
⋧	`\gnsim`	$\gnsim$	greater, not similar
≩︀	`\gvertneqq`	$\gvertneqq$	gt, vert, not dbl eq
⪉	`\lnapprox`	$\lnapprox$	less, not approximate
≨	`\lneqq`	$\lneqq$	less, not double equals
⪇	`\lneq`	$\lneq$	less, not equals
⋦	`\lnsim`	$\lnsim$	less, not similar
≨︀	`\lvertneqq`	$\lvertneqq$	less, vert, not dbl eq
≉	`\not\approx`	$\not\approx$	/napprox N: not approximate
≇	`\not\cong`	$\not\cong$	not congruent with
≢	`\not\equiv`	$\not\equiv$	/nequiv N: not identical with
≧̸	`\ngeqq`	$\ngeqq$	not greater, dbl equals
≱	`\not\geq`	$\not\geq$	not greater-than-or-equal
⩾̸	`\ngeqslant`	$\ngeqslant$	not gt-or-eq, slanted
≯	`\not>`	$\not>$	not greater-than
≰	`\not\leq`	$\not\leq$	not less-than-or-equal
≦̸	`\nleqq`	$\nleqq$	not less, dbl equals
⩽̸	`\nleqslant`	$\nleqslant$	not less-or-eq, slant
≮	`\not<`	$\not<$	not less-than
⋪	`\ntriangleleft`	$\ntriangleleft$	not left triangle
⋬	`\ntrianglelefteq`	$\ntrianglelefteq$	not l tri, eq
∤	`\nmid`	$\nmid$	
∦	`\nparallel`	$\nparallel$	not parallel
⊀	`\not\prec`	$\not\prec$	not precedes
⪯̸	`\not\preceq`	$\not\preceq$	not precedes, equals
⋫	`\ntriangleright`	$\ntriangleright$	not rt triangle
⋭	`\ntrianglerighteq`	$\ntrianglerighteq$	not r tri, eq
⊁	`\not\succ`	$\not\succ$	not succeeds
⪰̸	`\not\succeq`	$\not\succeq$	not succeeds, equals
≁	`\not\sim`	$\not\sim$	not similar
≄	`\not\simeq`	$\not\simeq$	/nsimeq N: not similar, equals
∤	`\nshortmid`	$\nshortmid$	
∦	`\nshortparallel`	$\nshortparallel$	not short par
⊄	`\not\subset`	$\not\subset$	/nsubset N: not subset
⊈	`\not\subseteq`	$\not\subseteq$	not subset, equals
⫅̸	`\nsubseteqq`	$\nsubseteqq$	not subset, dbl eq
⊅	`\not\supset`	$\not\supset$	/nsupset N: not superset
⫆̸	`\nsupseteqq`	$\nsupseteqq$	not superset, dbl eq
⊉	`\not\supseteq`	$\not\supseteq$	not superset, equals

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ISO entity	LaTeX equivalent	Appearance	Description
⊬	`\nvdash`	$\nvdash$	not vertical, dash
⊭	`\nvDash`	$\nvDash$	not vertical, dbl dash
⊯	`\nVDash`	$\nVDash$	not dbl vert, dbl dash
⊮	`\nVdash`	$\nVdash$	not dbl vertical, dash
⪹	`\precnapprox`	$\precnapprox$	precedes, not approx
⪵	`\precneqq`	$\precneqq$	precedes, not dbl eq
⋨	`\precnsim`	$\precnsim$	precedes, not similar
⪺	`\succnapprox`	$\succnapprox$	succeeds, not approx
⪶	`\succneqq`	$\succneqq$	succeeds, not dbl eq
⋩	`\succnsim`	$\succnsim$	succeeds, not similar
⊊	`\subsetneq`	$\subsetneq$	subset, not equals
⫋	`\subsetneqq`	$\subsetneqq$	subset, not dbl eq
⊋	`\supsetneq`	$\supsetneq$	superset, not equals
⫌	`\supsetneqq`	$\supsetneqq$	superset, not dbl eq
⫋︀	`\varsubsetneqq`	$\varsubsetneqq$	/subsetneqq N: subset not dbl eq, var
⊊︀	`\varsubsetneq`	$\varsubsetneq$	/subsetneq N: subset, not eq, var
⊋︀	`\varsupsetneq`	$\varsupsetneq$	/supsetneq N: superset, not eq, var
⫌︀	`\varsupsetneqq`	$\varsupsetneqq$	/supsetneqq N: super not dbl eq, var

5 Added Math Symbols: Ordinary

Source file: `ISOamso`

These caracters are only valid in a LaTeX math environment. Some of them also need the AMSSymb package.

ISO entity	LaTeX equivalent	Appearance	Description
∠	`\angle`	$\angle$	angle
∡	`\measuredangle`	$\measuredangle$	angle-measured
ℶ	`\beth`	$\beth$	beth, Hebrew
‵	`\backprime`	$\backprime$	reverse prime
∁	`\complement`	$\complement$	complement sign
ℸ	`\daleth`	$\daleth$	daleth, Hebrew
ℓ	`\ell`	ℓ	cursive small l
∅	`\emptyset`	$\emptyset$	small o, slash
ℷ	`\gimel`	$\gimel$	gimel, Hebrew
ℑ	`\Im`	$\Im$	imaginary
ı	`\imath`	$\imath$	small i, no dot
&jnodot;	`\jmath`	$\jmath$	small j, no dot
∄	`\nexists`	$\nexists$	negated exists
Ⓢ	`\circledS`	$\circledS$	capital S in circle
ℏ	`\hbar`	$\hbar$	Planck's over 2pi
ℜ	`\Re`	$\Re$	real
&sbsol;	`\smallsetminus`	$\smallsetminus$	/sbs - short reverse solidus
&vprime;	`{'}`	${'}$	/varprime - prime, variant
℘	`\wp`	$\wp$	Weierstrass p

6 Added Math Symbols: Relations

Source file: `ISOamsr`

These caracters are only valid in a LaTeX math environment. Some of them also need the AMSSymb package.

ISO entity	LaTeX equivalent	Appearance	Description
≊	`\approxeq`	$\approxeq$	approximate, equals
≈	`\asymp`	$\asymp$	asymptotically equal to
≌		missing	/backcong R: reverse congruent
϶	`\backepsilon`	$\backepsilon$	/backepsilon R: such that
⋈	`\bowtie`	$\bowtie$	
∽	`\backsim`	$\backsim$	reverse similar
⋍	`\backsimeq`	$\backsimeq$	reverse similar, eq
≎	`\Bumpeq`	$\Bumpeq$	bumpy equals
≏	`\bumpeq`	$\bumpeq$	bumpy equals, equals
≗	`\circeq`	$\circeq$	circle, equals
≔	`:=`	$:=$	/coloneq R: colon, equals
⋞	`\curlyeqprec`	$\curlyeqprec$	curly eq, precedes
⋟	`\curlyeqsucc`	$\curlyeqsucc$	curly eq, succeeds
&cupre;	`\preccurlyeq`	$\preccurlyeq$	/curlypreceq R: curly precedes, eq
⊣	`\dashv`	$\dashv$	dash, vertical
≖	`\eqcirc`	$\eqcirc$	circle on equals sign
≕	`=:`	$=:$	/eqcolon R: equals, colon
≑	`\doteqdot`	$\doteqdot$	eq, even dots
≐	`\doteq`	$\doteq$	equals, single dot above
≒	`\fallingdotseq`	$\fallingdotseq$	eq, falling dots
⪖	`\eqslantgtr`	$\eqslantgtr$	equal-or-gtr, slanted
⪕	`\eqslantless`	$\eqslantless$	eq-or-less, slanted
≓	`\risingdotseq`	$\risingdotseq$	eq, rising dots
⋔	`\pitchfork`	$\pitchfork$	pitchfork
⌢	`\frown`	$\frown$	down curve
⪆	`\gtrapprox`	$\gtrapprox$	greater, approximate
&gsdot;	`\gtrdot`	$\gtrdot$	greater than, single dot
≧	`\geqq`	$\geqq$	greater, double equals
⋛	`\gtreqless`	$\gtreqless$	greater, equals, less
⪌	`\gtreqqless`	$\gtreqqless$	gt, dbl equals, less
⩾	`\geqslant`	$\geqslant$	gt-or-equal, slanted
⋙	`\ggg`	$\ggg$	triple gtr-than
≷	`\gtrless`	$\gtrless$	greater, less
≳	`\gtrsim`	$\gtrsim$	greater, similar
≫	`\gg`	$\gg$	dbl greater-than sign
⪅	`\lessapprox`	$\lessapprox$	less, approximate
&ldot;	`\lessdot`	$\lessdot$	less than, with dot
≦	`\leqq`	$\leqq$	less, double equals
⪋	`\lesseqqgtr`	$\lesseqqgtr$	less, dbl eq, greater
⋚	`\lesseqgtr`	$\lesseqgtr$	less, eq, greater
⩽	`\leqslant`	$\leqslant$	less-than-or-eq, slant

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ISO entity	LaTeX equivalent	Appearance	Description
≶	`\lessgtr`	$\lessgtr$	less, greater
⋘	`\lll`	$\lll$	triple less-than
≲	`\lesssim`	$\lesssim$	less, similar
≪	`\ll`	$\ll$	double less-than sign
⊴	`\trianglelefteq`	$\trianglelefteq$	left triangle, eq
∣	`\mid`	$\mid$	
⊧	`\models`	$\models$	
≺	`\prec`	$\prec$	precedes
⪷	`\precapprox`	$\precapprox$	precedes, approximate
⪯	`\preceq`	$\preceq$	precedes, equals
≾	`\precsim`	$\precsim$	precedes, similar
⊵	`\trianglerighteq`	$\trianglerighteq$	right tri, eq
&samalg;		missing	/smallamalg R: small amalg
≻	`\succ`	$\succ$	succeeds
⪸	`\succapprox`	$\succapprox$	succeeds, approximate
≽	`\succcurlyeq`	$\succcurlyeq$	succeeds, curly eq
⪰	`\succeq`	$\succeq$	succeeds, equals
≿	`\succsim`	$\succsim$	succeeds, similar
⌢	`\smallfrown`	$\smallfrown$	small down curve
∣	`\shortmid`	$\shortmid$	
⌣	`\smile`	$\smile$	up curve
∥	`\shortparallel`	$\shortparallel$	short parallel
⊏	`\sqsubset`	$\sqsubset$	square subset
⊑	`\sqsubseteq`	$\sqsubseteq$	square subset, equals
⊐	`\sqsupset`	$\sqsupset$	square superset
⊒	`\sqsupseteq`	$\sqsupseteq$	square superset, eq
⌣	`\smallsmile`	$\smallsmile$	small up curve
⋐	`\Subset`	$\Subset$	double subset
⫅	`\subseteqq`	$\subseteqq$	subset, dbl equals
⋑	`\Supset`	$\Supset$	dbl superset
⫆	`\supseteqq`	$\supseteqq$	superset, dbl equals
≈	`\thickapprox`	$\thickapprox$	thick approximate
∼	`\thicksim`	$\thicksim$	thick similar
≜	`\triangleq`	$\triangleq$	triangle, equals
≬	`\between`	$\between$	between
⊢	`\vdash`	$\vdash$	vertical, dash
⊩	`\Vdash`	$\Vdash$	dbl vertical, dash
⊨	`\vDash`	$\vDash$	vertical, dbl dash
⊻	`\veebar`	$\veebar$	logical or, bar below
⊲	`\vartriangleleft`	$\vartriangleleft$	l tri, open, var
∝	`\varpropto`	$\varpropto$	proportional, variant
⊳	`\vartriangleright`	$\vartriangleright$	r tri, open, var
⊪	`\Vvdash`	$\Vvdash$	triple vertical, dash

7 Box and Line Drawing

Source file: `ISObox`

We have not found any LATEXTEX packages that provide these symbols.

ISO entity	LATEX equivalent	Appearance	Description
─		missing	horizontal line
│		missing	vertical line
└		missing	upper right quadrant
┘		missing	upper left quadrant
┐		missing	lower left quadrant
┌		missing	lower right quadrant
├		missing	upper and lower right quadrants
┴		missing	upper left and right quadrants
┤		missing	upper and lower left quadrants
┬		missing	lower left and right quadrants
┼		missing	all four quadrants
╞		missing	upper and lower right quadrants
╨		missing	upper left and right quadrants
╡		missing	upper and lower left quadrants
╥		missing	lower left and right quadrants
╪		missing	all four quadrants
═		missing	horizontal line
║		missing	vertical line
╚		missing	upper right quadrant
╝		missing	upper left quadrant
╗		missing	lower left quadrant
╔		missing	lower right quadrant
╠		missing	upper and lower right quadrants
╩		missing	upper left and right quadrants
╣		missing	upper and lower left quadrants
╦		missing	lower left and right quadrants
╬		missing	all four quadrants
╟		missing	upper and lower right quadrants
╧		missing	upper left and right quadrants
╢		missing	upper and lower left quadrants
╤		missing	lower left and right quadrants
╫		missing	all four quadrants
╘		missing	upper right quadrant
╜		missing	upper left quadrant
╕		missing	lower left quadrant
╓		missing	lower right quadrant
╙		missing	upper right quadrant
╛		missing	upper left quadrant
╖		missing	lower left quadrant
╒		missing	lower right quadrant

8 Russian Cyrillic

Source file: `ISOcyr1`

The cyrrilic alphabet is made available from the AMSFonts package, by defining a new environment called `cyr`:

```
\input cyracc.def
\font\tencyr=wncyr10
\def\cyr{\tencyr\cyracc}
```

LaTeX will not find the file `cyracc.def`. We solved this problem by copying this file to the same directory as this LaTeX source file. (In teTeX: `/texmf/tex/plain/misc`)

For details on using this cyrillic environment, see the AMSFonts User's Guide (`amsfndoc.dvi`). This document is usually located in: `/texmf/doc/latex/amsfonts/` (teTeX).

ISO entity	LaTeX equivalent	Appearance	Description
а	`\cyr{a}`	а	small a, Cyrillic
А	`\cyr{A}`	А	capital A, Cyrillic
б	`\cyr{b}`	б	small be, Cyrillic
Б	`\cyr{B}`	Б	capital BE, Cyrillic
в	`\cyr{v}`	в	small ve, Cyrillic
В	`\cyr{V}`	В	capital VE, Cyrillic
г	`\cyr{g}`	г	small ghe, Cyrillic
Г	`\cyr{G}`	Г	capital GHE, Cyrillic
д	`\cyr{d}`	д	small de, Cyrillic
Д	`\cyr{D}`	Д	capital DE, Cyrillic
е	`\cyr{e}`	е	small ie, Cyrillic
Е	`\cyr{E}`	Е	capital IE, Cyrillic
ё	`\cyr{\"e}`	ё	small io, Russian
Ё	`\cyr{\"E}`	Ё	capital IO, Russian
ж	`\cyr{zh}`	ж	small zhe, Cyrillic
Ж	`\cyr{Zh}`	Ж	capital ZHE, Cyrillic
з	`\cyr{z}`	з	small ze, Cyrillic
З	`\cyr{Z}`	З	capital ZE, Cyrillic
и	`\cyr{i}`	и	small i, Cyrillic
И	`\cyr{I}`	И	capital I, Cyrillic
й	`\cyr{\u\i}`	й	small short i, Cyrillic
Й	`\cyr{\u{I}}`	Й	capital short I, Cyrillic
к	`\cyr{k}`	к	small ka, Cyrillic
К	`\cyr{K}`	К	capital KA, Cyrillic
л	`\cyr{l}`	л	small el, Cyrillic
Л	`\cyr{L}`	Л	capital EL, Cyrillic
м	`\cyr{m}`	м	small em, Cyrillic
М	`\cyr{M}`	М	capital EM, Cyrillic
н	`\cyr{n}`	н	small en, Cyrillic
Н	`\cyr{N}`	Н	capital EN, Cyrillic

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ISO entity	LATEX equivalent	Appearance	Description
о	`\cyr{o}`	о	small o, Cyrillic
О	`\cyr{O}`	О	capital O, Cyrillic
п	`\cyr{p}`	п	small pe, Cyrillic
П	`\cyr{P}`	П	capital PE, Cyrillic
р	`\cyr{r}`	р	small er, Cyrillic
Р	`\cyr{R}`	Р	capital ER, Cyrillic
с	`\cyr{s}`	с	small es, Cyrillic
С	`\cyr{S}`	С	capital ES, Cyrillic
т	`\cyr{t}`	т	small te, Cyrillic
Т	`\cyr{T}`	Т	capital TE, Cyrillic
у	`\cyr{u}`	у	small u, Cyrillic
У	`\cyr{U}`	У	capital U, Cyrillic
ф	`\cyr{f}`	ф	small ef, Cyrillic
Ф	`\cyr{F}`	Ф	capital EF, Cyrillic
х	`\cyr{kh}`	х	small ha, Cyrillic
Х	`\cyr{Kh}`	Х	capital HA, Cyrillic
ц	`\cyr{ts}`	ц	small tse, Cyrillic
Ц	`\cyr{Ts}`	Ц	capital TSE, Cyrillic
ч	`\cyr{ch}`	ч	small che, Cyrillic
Ч	`\cyr{Ch}`	Ч	capital CHE, Cyrillic
ш	`\cyr{sh}`	ш	small sha, Cyrillic
Ш	`\cyr{Sh}`	Ш	capital SHA, Cyrillic
щ	`\cyr{shch}`	щ	small shcha, Cyrillic
Щ	`\cyr{Shch}`	Щ	capital SHCHA, Cyrillic
ъ	`\cyr{\cdprime}`	ъ	small hard sign, Cyrillic
Ъ	`\cyr{\Cdprime}`	Ъ	capital HARD sign, Cyrillic
ы	`\cyr{y}`	ы	small yeru, Cyrillic
Ы	`\cyr{Y}`	Ы	capital YERU, Cyrillic
ь	`\cyr{\cprime}`	ь	small soft sign, Cyrillic
Ь	`\cyr{\Cprime}`	Ь	capital SOFT sign, Cyrillic
э	`\cyr{\'e}`	é	small e, Cyrillic
Э	`\cyr{\'E}`	É	capital E, Cyrillic
ю	`\cyr{yu}`	ю	small yu, Cyrillic
Ю	`\cyr{Yu}`	Ю	capital YU, Cyrillic
я	`\cyr{ya}`	я	small ya, Cyrillic
Я	`\cyr{Ya}`	Я	capital YA, Cyrillic
№	`\cyr{NO}`	№	numero sign

9 Non-Russian Cyrillic

Source file: `ISOcyr2`

The cyrrilic alphabet is made available from the AMSFonts package, by defining a new environment called `cyr`:

```
\input cyracc.def
\font\tencyr=wncyr10
\def\cyr{\tencyr\cyracc}
```

LaTeX will not find the file `cyracc.def`. We solved this problem by copying this file to the same directory as this LaTeX source file. (In teTeX: `/texmf/tex/plain/misc`)

For details on using this cyrillic environment, see the AMSFonts User's Guide (`amsfndoc.dvi`). This document is usually located in: `/texmf/doc/latex/amsfonts/` (teTeX).

ISO entity	LaTeX equivalent	Appearance	Description
ђ	`\cyr{dj}`	ђ	small dje, Serbian
Ђ	`\cyr{Dj}`	Ђ	capital DJE, Serbian
ѓ	`\cyr{\'g}`	ѓ	small gje, Macedonian
Ѓ	`\cyr{\'G}`	Ѓ	capital GJE Macedonian
є	`\cyr{\=e}`	є	small je, Ukrainian
Є	`\cyr{\=E}`	Є	capital JE, Ukrainian
ѕ	`\cyr{\dz}`	ѕ	small dse, Macedonian
Ѕ	`\cyr{\Dz}`	Ѕ	capital DSE, Macedonian
і	`\cyr{\=\i}`	і	small i, Ukrainian
І	`\cyr{\=I}`	І	capital I, Ukrainian
ї	`\cyr{\"\i}`	ї	small yi, Ukrainian
Ї	`\cyr{\"I}`	Ї	capital YI, Ukrainian
ј	`\cyr{j}`	ј	small je, Serbian
Ј	`\cyr{J}`	Ј	capital JE, Serbian
љ	`\cyr{lj}`	љ	small lje, Serbian
Љ	`\cyr{Lj}`	Љ	capital LJE, Serbian
њ	`\cyr{nj}`	њ	small nje, Serbian
Њ	`\cyr{Nj}`	Њ	capital NJE, Serbian
ћ	`\cyr{\'c}`	ћ	small tshe, Serbian
Ћ	`\cyr{\'C}`	Ћ	capital TSHE, Serbian
ќ	`\cyr{\'k}`	ќ	small kje Macedonian
Ќ	`\cyr{\'K}`	Ќ	capital KJE, Macedonian
ў	`\cyr{\u{u}}`	ў	small u, Byelorussian
Ў	`\cyr{\u{U}}`	Ў	capital U, Byelorussian
џ	`\cyr{\dzh}`	џ	small dze, Serbian
Џ	`\cyr{\Dzh}`	Џ	capital dze, Serbian

10 Diacritical Marks

Source file: `ISOdia`

The **ogonek** character require the T1 font encoding.

ISO entity	LaTeX equivalent	Appearance	Description
´	\'{}	´	acute accent
˘	\u{}	˘	breve
ˇ	\v{}	ˇ	caron
¸	\c{}	¸	cedilla
ˆ	\^{}	ˆ	circumflex accent
˝	\H{}	˝	double acute accent
¨	\"{}	¨	dieresis
˙	\.{}	˙	dot above
`	\`{}	`	grave accent
¯	\={}	¯	macron
˛	\k{}	˛	ogonek
˚	\r{}	˚	ring
˜	\~{}	˜	tilde
¨	\"{}	¨	umlaut mark

11 Greek Letters

Source file: `ISOgrk1`

These characters are only valid in a LaTeX math environment.

ISO entity	LaTeX equivalent	Appearance	Description
&agr;	`\alpha`	α	small alpha, Greek
&Agr;	`A`	A	capital Alpha, Greek
&bgr;	`\beta`	β	small beta, Greek
&Bgr;	`B`	B	capital Beta, Greek
&ggr;	`\gamma`	γ	small gamma, Greek
&Ggr;	`\Gamma`	Γ	capital Gamma, Greek
&dgr;	`\delta`	δ	small delta, Greek
&Dgr;	`\Delta`	Δ	capital Delta, Greek
&egr;	`\epsilon`	ϵ	small epsilon, Greek
&Egr;	`E`	E	capital Epsilon, Greek
&zgr;	`\zeta`	ζ	small zeta, Greek
&Zgr;	`Z`	Z	capital Zeta, Greek
&eegr;	`\eta`	η	small eta, Greek
&EEgr;	`H`	H	capital Eta, Greek
&thgr;	`\theta`	θ	small theta, Greek
&THgr;	`\Theta`	Θ	capital Theta, Greek
&igr;	`\iota`	ι	small iota, Greek
&Igr;	`I`	I	capital Iota, Greek
&kgr;	`\kappa`	κ	small kappa, Greek
&Kgr;	`K`	K	capital Kappa, Greek
&lgr;	`\lambda`	λ	small lambda, Greek
&Lgr;	`\Lambda`	Λ	capital Lambda, Greek
&mgr;	`\mu`	μ	small mu, Greek
&Mgr;	`M`	M	capital Mu, Greek
&ngr;	`\nu`	ν	small nu, Greek
&Ngr;	`N`	N	capital Nu, Greek
&xgr;	`\xi`	ξ	small xi, Greek
&Xgr;	`\Xi`	Ξ	capital Xi, Greek
&ogr;	`o`	o	small omicron, Greek
&Ogr;	`O`	O	capital Omicron, Greek
&pgr;	`\pi`	π	small pi, Greek
&Pgr;	`\Pi`	Π	capital Pi, Greek
&rgr;	`\rho`	ρ	small rho, Greek
&Rgr;	`P`	P	capital Rho, Greek
&sgr;	`\sigma`	σ	small sigma, Greek
&Sgr;	`\Sigma`	Σ	capital Sigma, Greek
&sfgr;	`\varsigma`	ς	final small sigma, Greek
&tgr;	`\tau`	τ	small tau, Greek
&Tgr;	`T`	T	capital Tau, Greek
&ugr;	`\upsilon`	υ	small upsilon, Greek
&Ugr;	`Y`	Y	capital Upsilon, Greek
&phgr;	`\phi`	ϕ	small phi, Greek

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ISO entity	LaTeX equivalent	Appearance	Description
&PHgr;	`\Phi`	Φ	capital Phi, Greek
&khgr;	`\chi`	χ	small chi, Greek
&KHgr;	`X`	X	capital Chi, Greek
&psgr;	`\psi`	ψ	small psi, Greek
&PSgr;	`\Psi`	Ψ	capital Psi, Greek
&ohgr;	`\omega`	ω	small omega, Greek
&OHgr;	`\Omega`	Ω	capital Omega, Greek

12 Monotoniko Greek

Source file: `ISOgrk2`

These characters are only valid in a LaTeX math environment.

ISO entity	LaTeX equivalent	Appearance	Description
&aacgr;	`\acute{\alpha}`	$\acute{\alpha}$	small alpha, accent, Greek
&Aacgr;	`\acute{}A`	$\acute{}A$	capital Alpha, accent, Greek
&eacgr;	`\acute{\epsilon}`	$\acute{\epsilon}$	small epsilon, accent, Greek
&Eacgr;	`\acute{}E`	$\acute{}E$	capital Epsilon, accent, Greek
&eeacgr;	`\acute{\eta}`	$\acute{\eta}$	small eta, accent, Greek
&EEacgr;	`\acute{}H`	$\acute{}H$	capital Eta, accent, Greek
&idigr;	`\ddot{\iota}`	$\ddot{\iota}$	small iota, dieresis, Greek
&Idigr;	`\ddot{I}`	$\ddot{I}$	capital Iota, dieresis, Greek
&iacgr;	`\acute{\iota}`	$\acute{\iota}$	small iota, accent, Greek
&Iacgr;	`\acute{I}`	$\acute{I}$	capital Iota, accent, Greek
&idiagr;	`\acute{\ddot{\iota}}`	$\acute{\ddot{\iota}}$	small iota, dieresis, accent, Greek
&oacgr;	`\acute{o}`	$\acute{o}$	small omicron, accent, Greek
&Oacgr;	`\acute{}O`	$\acute{}O$	capital Omicron, accent, Greek
&udigr;	`\ddot{\upsilon}`	$\ddot{\upsilon}$	small upsilon, dieresis, Greek
&Udigr;	`\ddot{Y}`	$\ddot{Y}$	capital Upsilon, dieresis, Greek
&uacgr;	`\acute{\upsilon}`	$\acute{\upsilon}$	small upsilon, accent, Greek
&Uacgr;	`\acute{}Y`	$\acute{}Y$	capital Upsilon, accent, Greek
&udiagr;	`\ddot{\acute{\upsilon}}`	$\ddot{\acute{\upsilon}}$	small upsilon, dieresis, accent, Greek
&ohacgr;	`\acute{\omega}`	$\acute{\omega}$	small omega, accent, Greek
&OHacgr;	`\acute{}\Omega`	$\acute{}\Omega$	capital Omega, accent, Greek

13 Greek symbols

Source file: `ISOgrk3`

These characters are only valid in a LaTeX math environment. `\digamma` and `\varkappa` also need the AMSSymb package.

ISO entity	LaTeX equivalent	Appearance	Description
α	`\alpha`	α	small alpha
β	`\beta`	β	small beta
γ	`\gamma`	γ	small gamma
Γ	`\Gamma`	Γ	capital Gamma
ϝ	`\digamma`	$\digamma$	digamma
δ	`\delta`	δ	small delta
Δ	`\Delta`	Δ	capital Delta
ε	`\epsilon`	ϵ	small epsilon
ϵ	`\varepsilon`	ε	varepsilon
&epsis;	`\epsilon`	ϵ	straightepsilon
ζ	`\zeta`	ζ	small zeta
η	`\eta`	η	small eta
&thetas;	`\theta`	θ	traight theta
Θ	`\Theta`	Θ	capital Theta
ϑ	`\vartheta`	ϑ	vartheta - curly or open theta
ι	`\iota`	ι	small iota
κ	`\kappa`	κ	small kappa
ϰ	`\varkappa`	$\varkappa$	varkappa
λ	`\lambda`	λ	small lambda
Λ	`\Lambda`	Λ	capital Lambda
μ	`\mu`	μ	small mu
ν	`\nu`	ν	small nu
ξ	`\xi`	ξ	small xi
Ξ	`\Xi`	Ξ	capital Xi
π	`\pi`	π	small pi
ϖ	`\varpi`	ϖ	varpi
Π	`\Pi`	Π	capital Pi
ρ	`\rho`	ρ	small rho
ϱ	`\varrho`	ϱ	varrho
σ	`\sigma`	σ	small sigma
Σ	`\Sigma`	Σ	capital Sigma
ς	`\varsigma`	ς	varsigma
τ	`\tau`	τ	small tau
υ	`\upsilon`	υ	small upsilon
ϒ	`\Upsilon`	Υ	capital Upsilon
&phis;	`\phi`	ϕ	straightphi - straight phi
Φ	`\Phi`	Φ	capital Phi
ϕ	`\varphi`	φ	varphi - curly or open phi
χ	`\chi`	χ	small chi
ψ	`\psi`	ψ	small psi
Ψ	`\Psi`	Ψ	capital Psi
ω	`\omega`	ω	small omega

ISO entity	LaTeX equivalent	Appearance	Description
Ω	`\Omega`	Ω	capital Omega

14 Alternative Greek Symbols

Source file: `ISOgrk4`

These characters are only valid in a LaTeX math environment. `\digamma` and `\varkappa` also need the AMSSymb package.

ISO entity	LaTeX equivalent	Appearance	Description
&b.alpha;	`\alpha`	α	small alpha, Greek
&b.beta;	`\beta`	β	small beta, Greek
&b.gamma;	`\gamma`	γ	small gamma, Greek
&b.Gamma;	`\Gamma`	Γ	capital Gamma, Greek
&b.gammad;	`\digamma`	$\digamma$	digamma
&b.delta;	`\delta`	δ	small delta, Greek
&b.Delta;	`\Delta`	Δ	capital Delta, Greek
&b.epsi;	`\epsilon`	ϵ	small epsilon, Greek
&b.epsiv;	`\varepsilon`	ε	varepsilon
&b.epsis;	`\epsilon`	ϵ	straightepsilon
&b.zeta;	`\zeta`	ζ	small zeta, Greek
&b.eta;	`\eta`	η	small eta, Greek
&b.thetas;	`\theta`	θ	straight theta
&b.Theta;	`\Theta`	Θ	capital Theta, Greek
&b.thetav;	`\vartheta`	ϑ	vartheta - curly or open theta
&b.iota;	`\iota`	ι	small iota, Greek
&b.kappa;	`\kappa`	κ	small kappa, Greek
&b.kappav;	`\varkappa`	$\varkappa$	varkappa
&b.lambda;	`\lambda`	λ	small lambda, Greek
&b.Lambda;	`\Lambda`	Λ	capital Lambda, Greek
&b.mu;	`\mu`	μ	small mu, Greek
&b.nu;	`\nu`	ν	small nu, Greek
&b.xi;	`\xi`	ξ	small xi, Greek
&b.Xi;	`\Xi`	Ξ	capital Xi, Greek
&b.pi;	`\pi`	π	small pi, Greek
&b.Pi;	`\Pi`	Π	capital Pi, Greek
&b.piv;	`\varpi`	ϖ	varpi
&b.rho;	`\rho`	ρ	small rho, Greek
&b.rhov;	`\varrho`	ϱ	varrho
&b.sigma;	`\sigma`	σ	small sigma, Greek
&b.Sigma;	`\Sigma`	Σ	capital Sigma, Greek
&b.sigmav;	`\varsigma`	ς	varsigma
&b.tau;	`\tau`	τ	small tau, Greek
&b.upsi;	`\upsilon`	υ	small upsilon, Greek
&b.Upsi;	`\Upsilon`	Υ	capital Upsilon, Greek
&b.phis;	`\phi`	ϕ	straight phi
&b.Phi;	`\Phi`	Φ	capital Phi, Greek
&b.phiv;	`\varphi`	φ	varphi - curly or open phi
&b.chi;	`\chi`	χ	small chi, Greek
&b.psi;	`\psi`	ψ	small psi, Greek
&b.Psi;	`\Psi`	Ψ	capital Psi, Greek

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ISO entity	LaTeX equivalent	Appearance	Description
&b.omega;	`\omega`	ω	small omega, Greek
&b.Omega;	`\Omega`	Ω	capital Omega, Greek

15 Added Latin 1

Source file: `ISOlat1`

LaTeX2e has the capability of processing 8-bit characters. Put the following line in the header in your LaTeX file:

```
\usepackage[latin1]{inputenc}
```

and LaTeX will accept the complete ISO 8859-1 (Latin 1) character set. This will make typing LaTeX much easier (i.e you don't have to use the codes shown below).

The Icelandic characters also need the T1 font encoding.

ISO entity	LaTeX equivalent	Appearance	Description
á	`\'{a}`	á	small a, acute accent
Á	`\'{A}`	Á	capital A, acute accent
â	`\^{a}`	â	small a, circumflex accent
Â	`\^{A}`	Â	capital A, circumflex accent
à	`` \`{a} ``	à	small a, grave accent
À	`` \`{A} ``	À	capital A, grave accent
å	`\aa`	å	small a, ring
Å	`\AA`	Å	capital A, ring
ã	`\~{a}`	ã	small a, tilde
Ã	`\~{A}`	Ã	capital A, tilde
ä	`\"{a}`	ä	small a, dieresis or umlaut mark
Ä	`\"{A}`	Ä	capital A, dieresis or umlaut mark
æ	`\ae`	æ	small ae diphthong (ligature
Æ	`\AE`	Æ	capital AE diphthong (ligature
ç	`\c{c}`	ç	small c, cedilla
Ç	`\c{C}`	Ç	capital C, cedilla
ð	`\dh`	ð	small eth, Icelandic
Ð	`\DH`	Đ	capital Eth, Icelandic
é	`\'{e}`	é	small e, acute accent
É	`\'{E}`	É	capital E, acute accent
ê	`\^{e}`	ê	small e, circumflex accent
Ê	`\^{E}`	Ê	capital E, circumflex accent
è	`` \`{e} ``	è	small e, grave accent
È	`` \`{E} ``	È	capital E, grave accent
ë	`\"{e}`	ë	small e, dieresis or umlaut mark
Ë	`\"{E}`	Ë	capital E, dieresis or umlaut mark
í	`\'{i}`	í	small i, acute accent
Í	`\'{I}`	Í	capital I, acute accent
î	`\^{i}`	î	small i, circumflex accent
Î	`\^{I}`	Î	capital I, circumflex accent
ì	`` \`{i} ``	ì	small i, grave accent
Ì	`` \`{I} ``	Ì	capital I, grave accent
ï	`\"{i}`	ï	small i, dieresis or umlaut mark

continued on next page...

ISO entity	LaTeX equivalent	Appearance	Description
Ï	`\"{I}`	Ï	capital I, dieresis or umlaut mark
ñ	`\~{n}`	ñ	small n, tilde
Ñ	`\~{N}`	Ñ	capital N, tilde
ó	`\'{o}`	ó	small o, acute accent
Ó	`\'{O}`	Ó	capital O, acute accent
ô	`\^{o}`	ô	small o, circumflex accent
Ô	`\^{O}`	Ô	capital O, circumflex accent
ò	``\`{o}``	ò	small o, grave accent
Ò	``\`{O}``	Ò	capital O, grave accent
ø	`\o`	ø	small o, slash
Ø	`\O`	Ø	capital O, slash
õ	`\~{o}`	õ	small o, tilde
Õ	`\~{O}`	Õ	capital O, tilde
ö	`\"{o}`	ö	small o, dieresis or umlaut mark
Ö	`\"{O}`	Ö	capital O, dieresis or umlaut mark
ß	`\ss`	ß	small sharp s, German (sz ligature)
þ	`\th`	þ	small thorn, Icelandic
Þ	`\TH`	Þ	capital THORN, Icelandic
ú	`\'{u}`	ú	small u, acute accent
Ú	`\'{U}`	Ú	capital U, acute accent
û	`\^{u}`	û	small u, circumflex accent
Û	`\^{U}`	Û	capital U, circumflex accent
ù	``\`{u}``	ù	small u, grave accent
Ù	``\`{U}``	Ù	capital U, grave accent
ü	`\"{u}`	ü	small u, dieresis or umlaut mark
Ü	`\"{U}`	Ü	capital U, dieresis or umlaut mark
ý	`\'{y}`	ý	small y, acute accent
Ý	`\'{Y}`	Ý	capital Y, acute accent
ÿ	`\"{y}`	ÿ	small y, dieresis or umlaut mark

16 Added Latin 2

Source file: `ISOlat2`

Some of these characters need the T1 font encoding (characters with ogonek or stroke, and the eng. symbols).

ISO entity	LaTeX equivalent	Appearance	Description
ă	`\u{a}`	ă	small a, breve
Ă	`\u{A}`	Ă	capital A, breve
ā	`\={a}`	ā	small a, macron
Ā	`\={A}`	Ā	capital A, macron
ą	`\k{a}`	ą	small a, ogonek
Ą	`\k{A}`	Ą	capital A, ogonek
ć	`\'{c}`	ć	small c, acute accent
Ć	`\'{C}`	Ć	capital C, acute accent
č	`\v{c}`	č	small c, caron
Č	`\v{C}`	Č	capital C, caron
ĉ	`\^{c}`	ĉ	small c, circumflex accent
Ĉ	`\^{C}`	Ĉ	capital C, circumflex accent
ċ	`\.{c}`	ċ	small c, dot above
Ċ	`\.{C}`	Ċ	capital C, dot above
ď	`\v{d}`	ď	small d, caron
Ď	`\v{D}`	Ď	capital D, caron
đ	`\dj`	đ	small d, stroke
Đ	`\DJ`	Đ	capital D, stroke
ě	`\v{e}`	ě	small e, caron
Ě	`\v{E}`	Ě	capital E, caron
ė	`\.{e}`	ė	small e, dot above
Ė	`\.{E}`	Ė	capital E, dot above
ē	`\={e}`	ē	small e, macron
Ē	`\={E}`	Ē	capital E, macron
ę	`\k{e}`	ę	small e, ogonek
Ę	`\k{E}`	Ę	capital E, ogonek
ǵ	`\'{g}`	ǵ	small g, acute accent
ğ	`\u{g}`	ğ	small g, breve
Ğ	`\u{G}`	Ğ	capital G, breve
Ģ	`\c{G}`	Ģ	capital G, cedilla
ĝ	`\^{g}`	ĝ	small g, circumflex accent
&gcedil;	`\c{g}`	ģ	small g, cedilla
Ĝ	`\^{G}`	Ĝ	capital G, circumflex accent
ġ	`\.{g}`	ġ	small g, dot above
Ġ	`\.{G}`	Ġ	capital G, dot above
ĥ	`\^{h}`	ĥ	small h, circumflex accent
Ĥ	`\^{H}`	Ĥ	capital H, circumflex accent
ħ		missing	small h, stroke
Ħ		missing	capital H, stroke
İ	`\.{I}`	İ	capital I, dot above

continued on next page...

ISO entity	LaTeX equivalent	Appearance	Description
Ī	`\={I}`	Ī	capital I, macron
ī	`\={\i}`	ī	small i, macron
ĳ	`ij`	ij	small ij ligature
Ĳ	`IJ`	IJ	capital IJ ligature
ı	`\i`	ı	small i without dot
į	`\k{i}`	į	small i, ogonek
Į	`\k{I}`	Į	capital I, ogonek
ĩ	`\~{\i}`	ĩ	small i, tilde
Ĩ	`\~{I}`	Ĩ	capital I, tilde
ĵ	`\^{\j}`	ĵ	small j, circumflex accent
Ĵ	`\^{J}`	Ĵ	capital J, circumflex accent
ķ	`\c{k}`	ķ	small k, cedilla
Ķ	`\c{K}`	Ķ	capital K, cedilla
ĸ		missing	small k, Greenlandic
ĺ	`\'{l}`	ĺ	small l, acute accent
Ĺ	`\'{L}`	Ĺ	capital L, acute accent
ľ	`\v{l}`	ľ	small l, caron
Ľ	`\v{L}`	Ľ	capital L, caron
ļ	`\c{l}`	ļ	small l, cedilla
Ļ	`\c{L}`	Ļ	capital L, cedilla
ŀ		missing	small l, middle dot
Ŀ		missing	capital L, middle dot
ł	`\l`	ł	small l, stroke
Ł	`\L`	Ł	capital L, stroke
ń	`\'{n}`	ń	small n, acute accent
Ń	`\'{N}`	Ń	capital N, acute accent
ŋ	`\ng`	ŋ	small eng, Lapp
Ŋ	`\NG`	Ŋ	capital ENG, Lapp
ŉ	`n\'{}`	n´	small n, apostrophe
ň	`\v{n}`	ň	small n, caron
Ň	`\v{N}`	Ň	capital N, caron
ņ	`\c{n}`	ņ	small n, cedilla
Ņ	`\c{N}`	Ņ	capital N, cedilla
ő	`\H{o}`	ő	small o, double acute accent
Ő	`\H{O}`	Ő	capital O, double acute accent
Ō	`\={O}`	Ō	capital O, macron
ō	`\={o}`	ō	small o, macron
œ	`\oe`	œ	small oe ligature
Œ	`\OE`	Œ	capital OE ligature
ŕ	`\'{r}`	ŕ	small r, acute accent
Ŕ	`\'{R}`	Ŕ	capital R, acute accent
ř	`\v{r}`	ř	small r, caron
Ř	`\v{R}`	Ř	capital R, caron
ŗ	`\c{r}`	ŗ	small r, cedilla
Ŗ	`\c{R}`	Ŗ	capital R, cedilla
ś	`\'{s}`	ś	small s, acute accent
Ś	`\'{S}`	Ś	capital S, acute accent

continued on next page...

ISO entity	LaTeX equivalent	Appearance	Description
š	`\v{s}`	š	small s, caron
Š	`\v{S}`	Š	capital S, caron
ş	`\c{s}`	ş	small s, cedilla
Ş	`\c{S}`	Ş	capital S, cedilla
ŝ	`\^{s}`	ŝ	small s, circumflex accent
Ŝ	`\^{S}`	Ŝ	capital S, circumflex accent
ť	`\v{t}`	ť	small t, caron
Ť	`\v{T}`	Ť	capital T, caron
ţ	`\c{t}`	ţ	small t, cedilla
Ţ	`\c{T}`	Ţ	capital T, cedilla
ŧ		missing	small t, stroke
Ŧ		missing	capital T, stroke
ŭ	`\u{u}`	ŭ	small u, breve
Ŭ	`\u{U}`	Ŭ	capital U, breve
ű	`\H{u}`	ű	small u, double acute accent
Ű	`\H{U}`	Ű	capital U, double acute accent
ū	`\={u}`	ū	small u, macron
Ū	`\={U}`	Ū	capital U, macron
ų	`\k{u}`	ų	small u, ogonek
Ų	`\k{U}`	Ų	capital U, ogonek
ů	`\r{u}`	ů	small u, ring
Ů	`\r{U}`	Ů	capital U, ring
ũ	`\~{u}`	ũ	small u, tilde
Ũ	`\~{U}`	Ũ	capital U, tilde
ŵ	`\^{w}`	ŵ	small w, circumflex accent
Ŵ	`\^{W}`	Ŵ	capital W, circumflex accent
ŷ	`\^{y}`	ŷ	small y, circumflex accent
Ŷ	`\^{Y}`	Ŷ	capital Y, circumflex accent
Ÿ	`\"{Y}`	Ÿ	capital Y, dieresis or umlaut mark
ź	`\'{z}`	ź	small z, acute accent
Ź	`\'{Z}`	Ź	capital Z, acute accent
ž	`\c{z}`	z̧	small z, caron
Ž	`\c{Z}`	Z̧	capital Z, caron
ż	`\.{z}`	ż	small z, dot above
Ż	`\.{Z}`	Ż	capital Z, dot above

17 Numeric and Special Graphic

Source file: `ISOnum`

The characters here are available in text mode or math mode (varies). The symbols `\currency` `\cent` and `\brokenvert` are provided by the WASY font. `\yen` comes from AMSFonts. `\guillemotleft` and `\guillemotright` requires T1 font encoding.

ISO entity	LaTeX equivalent	Appearance	Description
½	`\frac{1}{2}`	$\frac{1}{2}$	fraction one-half
½	`\frac{1}{2}`	$\frac{1}{2}$	fraction one-half
¼	`\frac{1}{4}`	$\frac{1}{4}$	fraction one-quarter
¾	`\frac{3}{4}`	$\frac{3}{4}$	fraction three-quarters
⅛	`\frac{1}{8}`	$\frac{1}{8}$	fraction one-eighth
⅜	`\frac{3}{8}`	$\frac{3}{8}$	fraction three-eighth
⅝	`\frac{5}{8}`	$\frac{5}{8}$	fraction five-eighths
⅞	`\frac{7}{8}`	$\frac{7}{8}$	fraction seven-eighths
¹	`^1`	^{1}	superscript one
²	`^2`	^{2}	superscript two
³	`^3`	^{3}	superscript three
+	`+`	$+$	plus sign
±	`\pm`	$\pm$	plus-or-minus sign
<	`<`	$<$	less-than sign
=	`=`	$=$	equals sign
>	`>`	$>$	greater-than sign
÷	`\div`	$\div$	divide sign
×	`\times`	$\times$	multiply sign
¤	`\currency`	¤	general currency sign
£	`\pounds`	£	pound sign
$	`\$`	$	dollar sign
¢	`\cent`	¢	cent sign
¥	`\yen`	¥	yen sign
#	`\#`	#	number sign
%	`\%`	%	percent sign
&	`\&`	&	ampersand
*	`\ast`	$\ast$	asterisk
@	`@`	@	commercial at
[	`[`	[	left square bracket
\	`\backslash`	$\backslash$	backslash - reverse solidus
]	`]`	]	right square bracket
{	`\{`	$\{$	left curly bracket
―	`---`	—	horizontal bar
		`\vert`	$\vert$	vertical bar
}	`\}`	$\}$	right curly bracket
µ	`\mu`	μ	micro sign
Ω	`\Omega`	Ω	ohm sign
°	`^\circ`	$^\circ$	degree sign
º	`{{}^{\underline{o}}}`	$^{\underline{o}}$	ordinal indicator, masculine

continued on next page...

ISO entity	LaTeX equivalent	Appearance	Description
ª	{{}^{\underline{a}}}	ª	ordinal indicator, feminine
§	\S	§	section sign
¶	\P	¶	pilcrow (paragraph sign)
·	\cdot	·	middle dot
←	\leftarrow	←	leftward arrow
→	\rightarrow	→	rightward arrow
↑	\uparrow	↑	upward arrow
↓	\downarrow	↓	downward arrow
©	\copyright	©	copyright sign
®	\textregistered	®	registered sign
™	\texttrademark	™	trade mark sign
¦	\brokenvert	¦	broken (vertical) bar
¬	\lnot	¬	not sign
♪	\eighthnote	♪	music note (sung text sign)
!	!	!	exclamation mark
¡	!`	¡	inverted exclamation mark
"	"	"	quotation mark
'	'	’	apostrophe
(	(	(	left parenthesis
)	)	)	right parenthesis
,	,	,	comma
_	_	_	low line
‐	-	-	hyphen
.	.	.	full stop, period
/	/	/	solidus
:	:	:	colon P:
;	;	;	semicolon P:
?	?	?	question mark
¿	?`	¿	inverted question mark
«	\guillemotleft	«	angle quotation mark, left
»	\guillemotright	»	angle quotation mark, right
‘	`	‘	single quotation mark, left
’	'	’	single quotation mark, right
“	``	“	double quotation mark, left
”	''	”	double quotation mark, right
	~		no break (required) space
	\-		soft hyphen

18 Publishing

Source file: `ISOpub`

The characters here are available in text mode or math mode (varies). Some symbols are provided by the WASY font, some comes from AMSFonts and some requires T1 font encoding.

Note: LaTeX formats the **ff**, **fi**, **fj**, **fl**, **ffi** and **ffl** as ligature characters by default. `\textcompwordmark` is used to separate the characters.

ISO entity	LaTeX equivalent	Appearance	Description
	`\hspace{1em}`		em space
	`\hspace{0.5em}`		en space (1/2-em)
	`\hspace{0.33em}`		1/3-em space
	`\hspace{0.25em}`		1/4-em space
	`\hspace{0.5em}`		digit space (width of a number)
	`\hspace{0.25em}`		punctuation space (width of comma)
	`\hspace{0.167em}`		thin space (1/6-em)
	`\hspace{0.08333em}`		hair space
—	`---`	—	em dash
–	`--`	–	en dash
‐	`-`	-	hyphen (true graphic)
␣	`\textvisiblespace`	␣	significant blank symbol
…	`\ldots`	...	ellipsis (horizontal)
‥		missing	double baseline dot (en leader)
⅓	`\frac{1}{3}`	$\frac{1}{3}$	fraction one-third
⅔	`\frac{2}{3}`	$\frac{2}{3}$	fraction two-thirds
⅕	`\frac{1}{5}`	$\frac{1}{5}$	fraction one-fifth
⅖	`\frac{2}{5}`	$\frac{2}{5}$	fraction two-fifths
⅗	`\frac{3}{5}`	$\frac{3}{5}$	fraction three-fifths
⅘	`\frac{4}{5}`	$\frac{4}{5}$	fraction four-fifths
⅙	`\frac{1}{6}`	$\frac{1}{6}$	fraction one-sixth
⅚	`\frac{5}{6}`	$\frac{5}{6}$	fraction five-sixths
℅		missing	in-care-of symbol
█		missing	full block
▀		missing	upper half block
▄		missing	lower half block
░		missing	25% shaded block
▒		missing	50% shaded block
▓		missing	75% shaded block
▮		missing	histogram marker
○	`\circ`	∘	circle, open
□	`\square`	□	square, open
▭	`\fbox{~~}`	▭	rectangle, open
▵	`\vartriangle`	△	up triangle, open
▿	`\triangledown`	▽	down triangle, open
☆	`\ding{73}`	☆	star, open
•	`\bullet`	•	round bullet, filled
▪	`\blacksquare`	■	blacksquare =sq bullet, filled

continued on next page...

ISO entity	LaTeX equivalent	Appearance	Description
▴	\blacktriangle	▲	blacktriangle =up tri, filled
▾	\blacktriangledown	▼	blacktriangledown =dn tri, filled
◂	\blacktriangleleft	◀	blacktriangleleft R: =l tri, filled
▸	\blacktriangleright	▶	blacktriangleright R: =r tri, filled
♣	\clubsuit	♣	club suit symbol
♦	\diamondsuit	♢	diamond suit symbol
♥	\heartsuit	♡	heart suit symbol
♠	\spadesuit	♠	spades suit symbol
✠	\maltese	✠	maltese cross
†	\dag	†	dagger
‡	\ddag	‡	double dagger
✓	\checkmark	✓	tick, check mark
✗		missing	ballot cross
♯	\sharp	♯	musical sharp
♭	\flat	♭	musical flat
♂	\male	♂	male symbol
♀	\female	♀	female symbol
☎	\phone	☎	telephone symbol
⌕	recorder	⌕	telephone recorder symbol
℗		missing	sound recording copyright sign
⁁	\mathchar"1356	$\bigwedge$	caret (insertion mark)
‚	,	‚	rising single quote, left (low)
„	,,	„	rising dbl quote, left (low)
ﬀ	ff	ff	small ff ligature
ﬁ	fi	fi	small fi ligature
fj	fj	fj	small fj ligature
ﬃ	ffi	ffi	small ffi ligature
ﬄ	ffl	ffl	small ffl ligature
ﬂ	fl	fl	small fl ligature
…	\ldots	…	em leader
”	‘‘	“	rising dbl quote, right (high)
’	‘	‘	rising single quote, right (high)
⋮	\vdots	⋮	vertical ellipsis
&hybu ll;		missing	rectangle, filled (hyphen bullet)
◊		missing	lozenge - lozenge or total mark
⧫	\blacklozenge	⧫	blacklozenge - lozenge, filled
◃	\triangleleft	◁	l triangle, open
▹	\triangleright	▷	r triangle, open
★	\bigstar	★	bigstar - star, filled
♮	\natural	♮	music natural
℞		missing	pharmaceutical prescription (Rx)
✶		missing	sextile (6-pointed star)
⌖	\mathchar"2208	⊕	register mark or target
⌍		missing	downward left crop mark
⌌		missing	downward right crop mark
⌏		missing	upward left crop mark

continued on next page...

ISO entity	LaTeX equivalent	Appearance	Description
⌎		missing	upward right crop mark

19 General Technical

Source file: `ISOtech`

These caracters are only valid in a LaTeX math environment. `\sphericalangle` `\because` `\square` and `\therefore` also require AMSSymb.

ISO entity	LaTeX equivalent	Appearance	Description
ℵ	`\aleph`	$\aleph$	aleph, Hebrew
∧	`\wedge`	$\wedge$	logical and
&ang90;		missing	/right (90 degree) angle
∢	`\sphericalangle`	$\sphericalangle$	angle-spherical
≈	`\approx`	$\approx$	approximate
∵	`\because`	$\because$	because
⊥	`\bot`	$\bot$	perpendicular
∩	`\cap`	$\cap$	intersection
≅	`\cong`	$\cong$	congruent with
∮	`\oint`	$\oint$	contour integral operator
∪	`\cup`	$\cup$	union or logical sum
≡	`\equiv`	$\equiv$	identical with
∃	`\exists`	$\exists$	at least one exists
∀	`\forall`	$\forall$	for all
ƒ	`f`	f	function of (italic small f)
≥	`\qeq`	$\geq$	greater-than-or-equal
⇔	`\Leftrightarrow`	$\Leftrightarrow$	/iff =if and only if
∞	`\infty`	∞	infinity
∫	`\int`	$\int$	integral operator
∈	`\in`	$\in$	set membership
⟨	`\langle`	$\langle$	left angle bracket
⇐	`\Leftarrow`	$\Leftarrow$	is implied by
≤	`\leq`	$\leq$	less-than-or-equal
−	`-`	$-$	minus sign
∓	`\mp`	$\mp$	minus-or-plus sign
∇	`\nabla`	∇	del, Hamilton operator
≠	`\not=`	$\not=$	not equal
∋	`\ni`	$\ni$	contains
∨	`\vee`	$\vee$	logical or
∥	`\parallel`	$\parallel$	parallel
∂	`\partial`	∂	partial differential
‰	`\permil`	‰	per thousand
⊥	`\perp`	$\perp$	R: perpendicular
′	`\prime`	$\prime$	prime or minute
″	`{''}`	$''$	double prime or second
∝	`\propto`	$\propto$	is proportional to
√	`\surd`	$\surd$	radical
⟩	`\rangle`	$\rangle$	right angle bracket
⇒	`\Rightarrow`	$\Rightarrow$	implies
∼	`\sim`	$\sim$	similar
≃	`\simeq`	$\simeq$	similar, equals

continued on next page...

ISO entity	LATEX equivalent	Appearance	Description
□	`\square`	$\square$	square
⊂	`\subset`	$\subset$	subset or is implied by
⊆	`\subseteq`	$\subseteq$	subset, equals
⊃	`\supset`	$\supset$	superset or implies
⊇	`\supseteq`	$\supseteq$	superset, equals
∴	`\therefore`	$\therefore$	therefore
‖	`\Vert`	$\Vert$	dbl vertical bar
Å	`\AA`	Å	Angstrom =capital A, ring
ℬ	`\mathcal{B}`	$\mathcal{H}$	Bernoulli function (script capital B)
∘		missing	B: composite function (small circle)
¨	`\ddot{}`	¨	=dieresis or umlaut mark
⃜		missing	four dots above
ℋ	`\mathcal{H}`	$\mathcal{H}$	Hamiltonian (script capital H)
ℒ	`\mathcal{L}`	$\mathcal{L}$	Lagrangian (script capital L)
∗		missing	low asterisk
∉	`\not\in`	$\not\in$	N: negated set membership
ℴ	`\mathcal{o}`	$\wr$	order of (script small o)
ℳ	`\mathcal{M}`	$\mathcal{M}$	physics M-matrix (script capital M)
⃛		missing	three dots above
‴	`{'''}`	$'''$	triple prime
≙		missing	R: corresponds to (wedge, equals)

20 About this document

20.1 Copyright information

20.2 References

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20.3 Acknowledgements

Thanks to Eli Toftøy-Andersen <`elita@infotek.no`> and Steve Pepper <`pepper@infotek.no`> for proof-reading and suggestions.